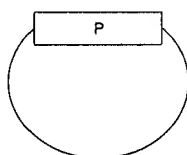


1. AMENDMENTS TO THE CLAIMS (LISTING OF CLAIMS):

This listing of claims will replace all prior versions and listings of claims in the application:

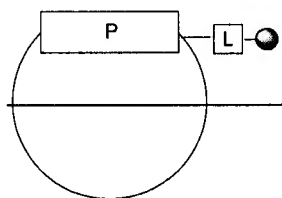
1-7. (Canceled)

8. (Currently Amended) A method of synthesis of a cyclic peptide or peptidomimetic compound of General Formula I




General Formula I

~~or General Formula II~~



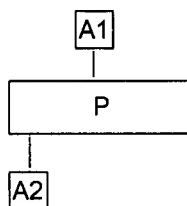
~~General Formula II~~

~~where L in General Formula II is a linker unit linking the cyclic peptide to a solid support~~

~~—in which the cycle is a monocycle, bicycle or higher order cyclic peptide or~~

peptidomimetic compound comprising 2 to 15 monomers, which is carried out in solution, comprising the steps of:

- a) preparing a linear peptide or peptidomimetic compound of General Formula III



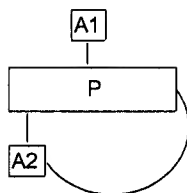
General Formula III

where **P** is a linear peptide or peptidomimetic compound of 2 to 15 monomers;

A1 is one or more reversible *N*-substituents, on the peptide backbone, or is a chemical moiety that forces a *cis* conformation of the backbone, and

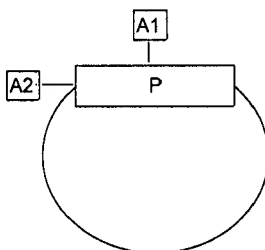
A2 is a covalently-bonded group of atoms comprising a reactive functionality to form an initial large cyclic peptide prior to ring contraction to the desired substituted cyclic peptide;

- b) activating the *C*-terminus to form a cyclic peptide or peptidomimetic compound of General Formula IV:



General Formula IV

- c) Permitting the peptide or peptidomimetic compound of General Formula IV to rearrange *via* a ring contraction reaction to form a cyclic peptide or peptidomimetic compound of General Formula V; and

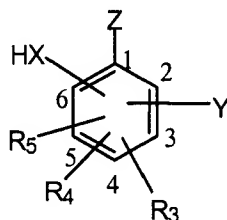


General Formula V

- d) Subjecting the cyclic peptide or peptidomimetic compound of General Formula V to a deprotection reaction to remove the **A1** and **A2** groups to yield the desired cyclic peptide or peptidomimetic compound of General Formula I or General Formula II.
9. (Previously Presented) The method of claim 8, in which **P** is a linear peptide of 2 to 10 monomers.

10. (Previously Presented) The method of claim 9, in which **P** is a linear peptide of 2 to 5 monomers.
11. (Canceled)
12. (Previously Presented) The method of claim 53, in which: (a) **A1** is subsequently linked to said solid support or said another cyclic peptide or peptidomimetic compound; (b) **A2** is subsequently linked to said solid support or to said another cyclic peptide or peptidomimetic compound; or (c) both **A1** and **A2** are subsequently linked to said solid support or to said another cyclic peptide or peptidomimetic compound.
13. (Canceled)
14. (Previously Presented) The method of claim 8, in which **A1** is a 2-hydroxy-4-methoxybenzyl, 2-hydroxybenzyl or 2-hydroxy-6-nitrobenzyl substituent.
15. (Previously Presented) The method of claim 8, in which **A2** is eliminated by spontaneous ring contraction.
16. (Previously Presented) The method of claim 8, in which **A2** comprises a nucleophile that reacts rapidly with a C-terminus to form an initial large ring, which then contracts either spontaneously, or upon heating or additional chemical treatment.

17. (Previously Presented) The method of claim 16, in which **A2** is thiol or hydroxyl.
18. (Previously Presented) The method of claim 8, in which **A2** is removed after ring contraction or is eliminated spontaneously upon ring contraction.
19. (Previously Presented) The method of claim 8, in which **A2** is formed by reacting an amino nitrogen in **P** with a compound of general formula:



in which the ring:

- (a) is an aromatic 6-membered ring;
- (b) comprises 3 carbon atoms substituted respectively by **XH**, **Z** and **Y**; and
- (c) is additionally substituted,

in which

XH is OH, SH, CH₂OH, or CH₂SH;

Y is an electron-withdrawing group;

Z is any group which allows the formation of a covalent carbon-nitrogen bond; and

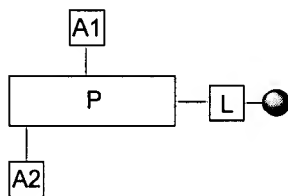
R³, **R⁴** and **R⁵** are each independently hydrogen, alkyl, aryl, arylalkyl, heteroaryl, alkoxy, aryloxy, XH or Y, or a covalent linkage to a solid support, and

in which **R³** and **R⁴** or **R⁴** and **R⁵** can optionally together with the ring form a 5-, 6-, or 7-membered ring.

20-31. (Canceled)

32. (Previously Presented) A method of solid phase synthesis of a cyclic peptide, comprising the steps of:

a) synthesis of a linear solid support-bound peptide of General Formula XIII,



General Formula XIII

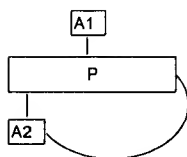
where **P** is a linear peptide of 2 to 15 monomers;

A1 is one or more *N*-substituents, either reversible or non-reversible, on the peptide backbone, or is a chemical moiety that forces a *cis* conformation of the backbone, and

A2 is a covalently-bonded group of atoms comprising a reactive functionality to form an initial large cyclic peptide prior to ring contraction to the desired substituted cyclic peptide;

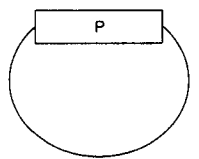
L is a linker between any atom of the peptide and the solid support; and

b) subjecting the peptide of General Formula XIII to cyclization and concomitant cleavage from the solid support to yield a cyclic peptide of General Formula XIV,



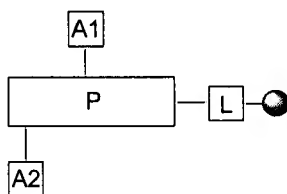
General Formula XIV

- c) subjecting the cyclic peptide of General Formula XIV to ring contraction, and
- d) if **A1** is a reversible substituent, cleaving the groups **A1** and **A2** to yield the desired cyclic peptide of General Formula I:



33. (Previously Presented) A method of solid phase synthesis of a cyclic peptide, comprising the steps of;

- a) synthesis of a linear solid support-bound peptide of General Formula XIII,



General Formula XIII

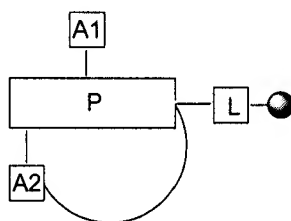
where **P** is-a linear peptide of 2 to 15 monomers;

A1 is one or more N-substituents, either reversible or non-reversible, on the peptide backbone, or is a chemical moiety that forces a *cis* conformation of the backbone, and

A2 is a covalently-bonded group of atoms comprising a reactive functionality to form an initial large cyclic peptide prior to ring contraction to the desired substituted cyclic peptide; and

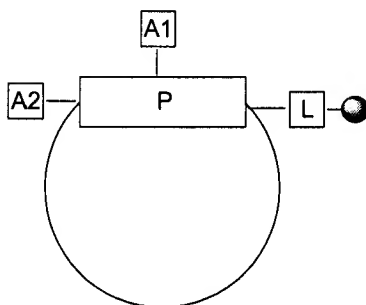
L is a linker between any atom of the peptide and the solid support; and

- b) subjecting the linear peptide to cyclization on the solid support to yield a cyclic peptide of General Formula XV,



General Formula XV

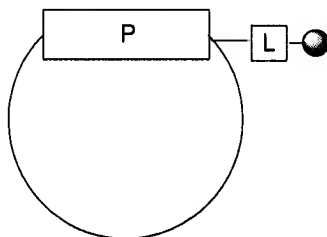
- c) subjecting the cyclic peptide to ring contraction to yield a cyclic peptide of General Formula XVI,



General Formula XVI

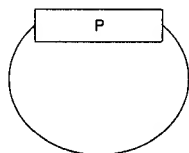
and either

- d) cleaving groups **A1** and **A2** while the peptide is bound to the solid support to yield a resin-bound cyclic peptide of General Formula II, or



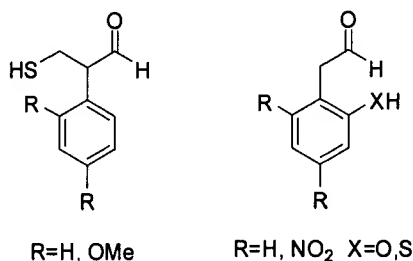
General Formula II

- e) subjecting the cyclic peptide to deprotection and concomitant cleavage from the solid support to yield the desired cyclic peptide of General Formula I:



34. (Previously Presented) The method of claim 33, in which side chain deprotection of the peptide, removal of **A1** and cleavage from the solid support are performed separately.
35. (Previously Presented) The method of claim 33, in which side chain deprotection of the peptide, removal of **A1** and cleavage from the solid support are performed concurrently.
- 36-38. (Canceled)
39. (Previously Presented) The method of claim 32, in which one or more of the monomers carries a side chain protecting group.
40. (Previously Presented) The method of claim 33, in which one or more of the monomers carries a side chain protecting group.
- 41-43. (Canceled)

44. (Previously Presented) The method of claim 33, in which A1 is a *cis*-amide bond surrogate.
45. (Previously Presented) The method of claim 44, in which the *cis*-amide bond surrogate is a tetrazole.
46. (Currently Amended) The method of claim 32, in which A2 is ~~a ring-contraction auxiliary formed by reacting an amine nitrogen in P with a compound~~ selected from the group consisting of:

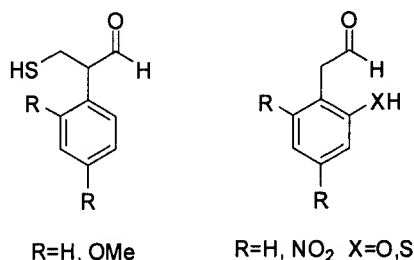


and

wherein said auxiliary facilitates contraction of said ring to form said cyclic peptide-~~or~~ said cyclic peptidomimetic.

47. (Previously Presented) The method of claim 32, in which **A2** is 6-nitro-2-hydroxybenzyl, 4-nitro-2-hydroxybenzyl or 5-nitro-2-hydroxybenzyl.

48. (Currently Amended) The method of claim 33, in which **A2** is formed by reacting an amine nitrogen in P with a compound ~~a ring contraction auxiliary~~ selected from the group consisting of:



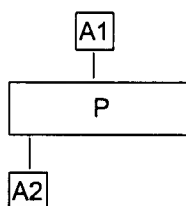
and

wherein said auxiliary facilitates contraction of said ring to form said cyclic peptide-~~or~~
said cyclic peptidomimetic.

49. (Previously Presented) The method of claim 33, in which **A2** is 6-nitro-2-hydroxybenzyl, 4-nitro-2-hydroxybenzyl or 5-nitro-2-hydroxybenzyl.
50. (Previously Presented) The method of claim 8, in which the ring contraction reaction occurs spontaneously.
51. (Previously Presented) The method of claim 32, in which the ring contraction reaction occurs spontaneously.
52. (Previously Presented) The method of claim 33, in which the ring contraction reaction occurs spontaneously.

53. (Previously Presented) A method of synthesis of a cyclic peptide or peptidomimetic compound, which is carried out in solution, comprising the steps of:

a) preparing a linear peptide or peptidomimetic compound of General Formula III



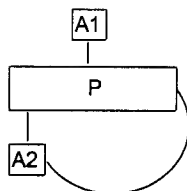
General Formula III

where **P** is a linear peptide or peptidomimetic compound of 2 to 15 monomers;

A1 is one or more *N*-substituents, either reversible or non-reversible, on the peptide backbone, or is a chemical moiety that forces a *cis* conformation of the backbone, and

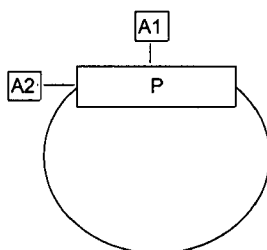
A2 is a covalently-bonded group of atoms comprising a reactive functionality to form an initial large cyclic peptide prior to ring contraction to the desired substituted cyclic peptide;

b) activating the *C*-terminus to form a cyclic peptide or peptidomimetic compound of General Formula IV:



General Formula IV

- c) permitting the peptide or peptidomimetic compound of General Formula IV to rearrange *via* a ring contraction reaction to form a cyclic peptide or peptidomimetic compound of General Formula V; and



General Formula V

- d) wherein either the **A1** group or the **A2** group is left attached to the peptide, or both **A1** and **A2** are left attached to the peptide.